Ultratech

Low Cost Lithography Tool For High Brightness LED Manufacturing

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Andrew M. Hawryluk, Ph.D.

Project Goal

The goal of this program was to modify a lithography tool used for semiconductor manufacturing to meet the cost and performance targets of the high brightness LED manufacturing industry.

At a high level, the goals of the program were:

- **To reduce the cost of lithography exposures (cost of ownership),**
- **Reduce the capital equipment cost of the tool,**
- **Modify the tool to handler**
- **Improve the product yield**

Approaches

- **Reduced the Capital Equipment cost of the tool by ~30% through re-engineering**
- **Increase the tool throughput with**
  - A higher brightness source
  - A faster theta-stage
  - A universal wafer-size capability
- **Develop an IR off axis alignment system**
- **Develop an integrated system enclosure**
- **Develop a warped-wafer handling system**